

## Assessment

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Score: \_\_\_\_\_

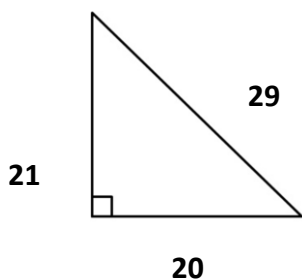
### Part 1: 8.G.6. Explain a proof of the Pythagorean Theorem and its converse.

#### **Basic:**

1. Write down the Pythagorean Theorem \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ (Equation)

2. Explain the Pythagorean Theorem.

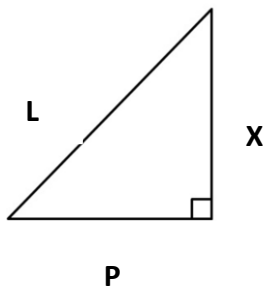
3. Draw a square next to each side of the triangle. Show that this is a right triangle by using a Pythagorean Theorem.



#### **Target:**

4. Below is a right triangle with side P, X, and L.

Write down the Pythagorean Theorem using the letter P, X, and L \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ (Equation)



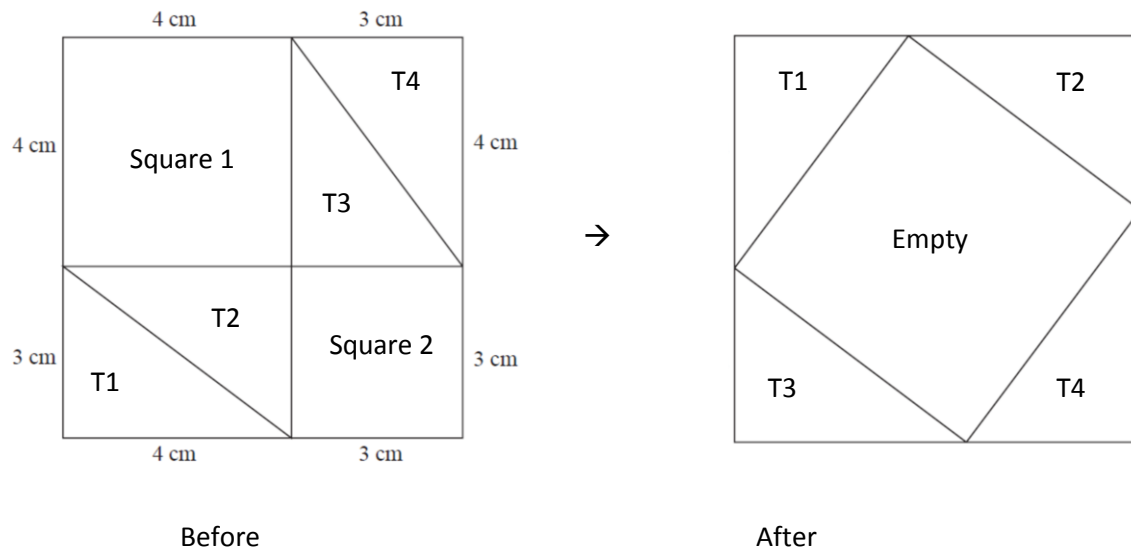
5. Write down the Pythagorean Theorem \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ (Same as question 1). This equation is used to find the hypotenuse (c).

Now rewrite the equation that will be used to find the leg (a) \_\_\_\_\_

Now rewrite the equation that will be used to find the leg (b) \_\_\_\_\_

*Advance:*

6. Here is a square broken into six parts. Four of them are triangle (T1, T2, T3, and T4)



Rearranging the 4 triangles (T1, T2, T3, and T4) form a square. The empty part is also a square.

A) What is the area of Empty Square?

B) How does the area of Square 1 and square 2 related to area of empty square?

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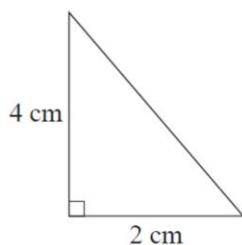
**\*8.G.7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.**

### Part 2

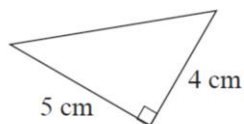
#### Basic:

1. Calculate the length of the hypotenuse of each of the following triangles, giving your answers correct to 1 decimal place:

(a)



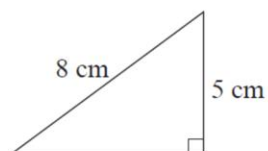
(b)



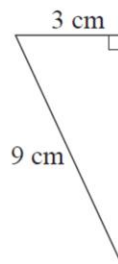
(c)

2. Calculate the lengths of the unknown sides in the following triangles, giving your answers correct to 1 decimal place:

(a)



(b)



#### Target: 3.

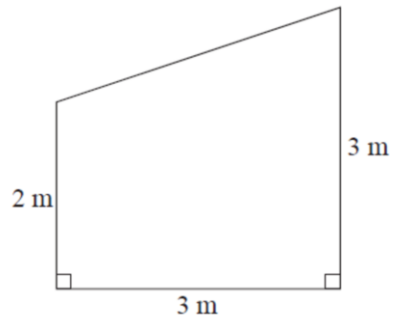
A rope, of length 3 m, is fixed to the top of a tent pole. The tent pole is vertical and its length is 1.5 m. The rope is pulled tight, with the other end on the ground. How far is the end of the rope from the base of the pole?

Target:

4.

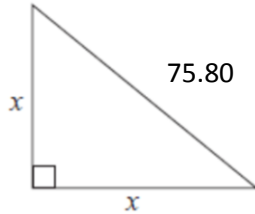
The diagram shows the side view of a shed.

What is the length of the sloping roof of the shed, correct to 1 decimal place?



Advance:

5. The isosceles triangle below has 2 sides of the length  $x$  cm. Find the value of  $x$  correct to 1 decimal place.



6. A wooden box that measures 4 ft. by 3 ft. by 2 ft. What is the measure of longest rod that fit inside this box?

